ADVANCING ANIMAL DISEASE TRACEABILITY ROAD MAP FOR
THE STATE OF TENNESSEE

A Three-Year Plan

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Table of Contents

I. EXECUTIVE SUMMARY

Tennessee is a major agricultural state and the beef cattle industry is one of the leading animal commodities in Tennessee. An important element in the international and to a lesser extent, national, marketing of beef is the capability to trace an animal back to its origin with the goal to safeguard animal health and public health using the latest technology allowing for quick response to a livestock disease event or incident of concern. The Tennessee Department of Agriculture (TDA) is coordinating efforts to implement the Animal Disease Traceability (ADT) Program through an industry driven approach. TDA provides incentives to livestock markets and accredited veterinarians through the Tennessee Market Cattle Identification Program (MCIP), TDA hopes to increase the number of animals identified and register more premises.

The central resource to accomplish the Market Cattle Identification Program is the web-based data system installed in 2010 that allows identification data to be entered directly into the TDA database from participating livestock markets and accredited livestock veterinarians. This direct entry of identification data facilitates efficient documentation of animal identification for conducting an animal disease inquiry or for documentation of disease free status.

The State of Tennessee currently has 40 livestock markets with 27 markets participating in the Market Cattle Identification Program. The traceability program was expanded three years ago to include the capture of identification data from health certificates. This expansion moves the program toward the goal of identifying all eligible cattle in marketing channels, including slaughter cattle which are presently identified at markets with official USDA approved back tags. This work will advance animal disease traceability, not only in Tennessee, but will also interface with other jurisdictions throughout the country. This system provides an ongoing method for continual monitoring of the livestock population for disease or other situations that might be injurious to animal and human health.

Objectives of the Tennessee Animal Traceability Program

1. Maintain and advance current animal disease traceability infrastructure within Tennessee.

2. Conduct outreach activities to producers, accredited veterinarians, livestock markets, harvest facilities and other industry shareholders.

3. To advance the animal disease tracing capability of the Tennessee Animal Identification Program by focusing on the point of commerce, primarily livestock markets utilizing accredited veterinarians by linking official identification to the market sales identifier and premises. TDA seeks to advance the animal disease tracing capability by increasing the amount of traceability data collected by interstate health certificates of inspection and by increased veterinarian participation in the Cattle Identification Program.

4. Establish objective assessment of animal disease traceability by providing baseline measures and projected advancements during the three year period of the Roadmap.

2010   Market cattle identification website data entry begins

2011   Accredited Veterinarian Cattle identification incentive program begins

2011   Electronic Certificates of Veterinary Inspection Program begins

2013   Program for Producers to receive NUES tags directly

2014-15 Increase the number of veterinarians using ECVI and participating in
        Cattle Identification Program

2016   Trace 90 % of market cattle through an electronic data base

- What is the fundamental problem(s) this plan addresses?

   The beef cattle industry is one of the leading animal commodities in Tennessee. An important element in the marketing of beef is the capability to trace an animal back to its origin with the goal to safeguard animal health and public health allowing for quick response to a livestock disease event or incident of concern.

- What are the key elements in summary form?

   Tennessee Department of Agriculture (TDA) is promoting the new traceability rule by encouraging livestock markets, veterinarians and cattle owners located in the state of Tennessee to participate in the Cattle Identification Program. These programs require that participating herds have a premises identification number. By providing incentives to livestock markets and accredited veterinarians through the Tennessee Cattle Identification Program, TDA hopes to increase the number of animals identified and register more premises.

   What are the primary benefits?

   The objective of animal disease traceability program is to have epidemiological information prior to any disease inquiry or response need, and by so doing support effective animal disease surveillance plan that documents disease free status.

- How does this plan build upon previous efforts to advance animal disease traceability?

   The TDA and the animal industry have made notable progress throughout the state in animal traceability. The intent is to continue improving the efficacy of the animal traceability program by increased participation of the livestock markets currently not participating in the volunteer program. Secondly, TDA seeks to increase the number of veterinarians participating in the Veterinary Cattle Identification Program and strives to increase the use of electronic Certificates of Veterinary Inspection.

- How does this plan fit within USDA's new framework for animal disease traceability?

  The installation of the web-based data system allows identification data to be entered directly into the TDA database from participating livestock markets and accredited veterinarians. This direct entry of identification data facilitates efficient documentation of animal identification for conducting an animal disease inquiry or for documentation of disease freedom. All Tennessee's program information is also being entered into Core One.

- How does this plan support animal health information systems within the State/Tribe/Territory?

  The Tennessee MCIP supports animal health information systems in the state by using official individual identification that originates from legitimate cattle premises or licensed livestock markets, with both having premises identification as the location identifier. The individual identification devices are unique ear tags, either 840 RFID tags or the USDA metal NUES tags.

- How does this plan support animal health information needs with other States/Tribes/Territories and USDA nationally?

  The Tennessee animal disease traceability information is compatible and interoperable with other States/Tribes/Territories and USDA and allows sharing animal disease traceability data. The individual identification used is official and originates from legitimate cattle premises or licensed livestock markets, with both having premises identification as the location identifier. The individual identification devices are unique ear tags, either 840 RFID tags or the USDA metal NUES tags.

- What alternatives were explored?

  Other programs were considered, but the web based database was considered the most efficient and cost effective.

- The projection costs are based on FY2013 USDA contributions which cover less than 50% of the actual salaries and benefits of the staff involved in animal traceability.

- FY2014 $ 144,000.00
- FY2015 $ 151,000.00
- FY2016 $159,000.00

II.   CURRENT TRACEABILITY SITUATION
2.1   Who are we?

- The primary constituents: Tennessee Department of Agriculture

- The external constituents:
  Licensed Tennessee Livestock Markets
  Private Veterinarians
  Tennessee Accredited Veterinarians
  Farm Service Agency
  Tennessee Agriculture Extension Service
  Tennessee Farm Bureau
  Tennessee Farmer's Cooperative
  Tennessee Livestock Network
  Livestock Producers
  University of Tennessee College of Veterinary Facility

- What does statewide, tribal-wide, territory-wide mean?

  Twenty-seven (27) accredited livestock markets participate in the Market Cattle Identification Program statewide. State and federal field personnel visit markets regularly on sale days for purposes of inspection and monitoring activities, including verification that all eligible cattle are identified according to the new traceability rule, that identification tags are properly placed, and that required record keeping and transmission of ID data is being done in timely fashion and in accordance with instructions. Field personnel, consisting of seven (7) animal health technicians and three (3) staff veterinarians, maintain liaison with the livestock markets and market veterinarians on all matters pertaining to the Federal traceability rule and the market cattle identification program. Also the TDA field personnel will visit with accredited veterinarians and livestock producers to address animal disease traceability (ADT) rules. Another staff veterinarian serves as the ADT Coordinator and provides oversight to the program.

- How is traceability data used internally, externally?

  The TDA computer database is a password protected website system, whereby identification data is entered directly into the TDA database from participating livestock markets. This website system has increased the amount and search ability of animal disease traceability data collected through the program.

- Values that guide the Tennessee animal disease traceability system.

  An important element in the marketing of beef is the capability to trace an animal back to its origin with the goal to safeguard animal health and public health allowing for quick response to a livestock disease event or incident of concern.

2.2   Where are we now?

The TDA ADT program including the Market Cattle Identification Program database is viewed as a crosscutting and an integral component of the animal health information system. There are (40) livestock markets in the state of Tennessee and of these 27 of the larger facilities are currently participating in the Market Cattle Identification Program. All 40 markets are monitored by the field staff to make sure the Federal Traceability Rules are followed. Since the first ADT Roadmap two years ago five (5) new markets now participate in the Tennessee Market Cattle Identification program. One smaller market has dropped out of the program. Thirty-two (32) Food Animal Veterinarians participate in the Tennessee Veterinary Cattle Identification Program (VCIP), this is an additional 20 veterinarians participating in the program in the past 24 months. Since the computer database is a website system the identification data is entered directly into the TDA database from participating livestock markets and accredited veterinarians. This web based data system has increased the amount and accessibility of animal disease traceability data collected through the program. The Animal Traceability website is a vital component of disease surveillance in Tennessee.

- What measures of traceability capability are currently being used? What are the specific values and associated interpretation?

  Besides actual disease trace backs, four animal traceability test exercises are planned for each fiscal year to test the trace-back efficacy of the program. Each exercise involves the tracing of five animal identification from sources that include official test charts, certificates of veterinary inspection, market and official tag distribution records.

  Measures currently in place are the USDA traceability standards to measure animal traceability capability which are: 1) Time to trace a reference animal to the previous location of co-mingling. 2) Time to trace animals detected and traced for program diseases such as brucellosis and tuberculosis.

In 2012 and 2013 using the Traceability Performance Measure Recording template, Tennessee had the following traceability exercise results.

Activity	# of Traces	Average Hrs.
One	6	43.0 hrs.
Two	6	2.3
Three	4	49.6
Four	5	17.9

The table below shows traceability data for the past eight (8) years for test traces and program disease trace-backs.

Year	# Traced	Av. Trace-back time in days
2013	9	1.2
2012	8	1.5
2011	21	3.8
2010	16	7.4
2009	16	6.3
2008	26	7.4
2007	24	31.7
2006	36	45.9

Since 2007 when the current market traceability program was implemented there has been a sharp drop in the average trace back time. During this eight (8) year period, there was only one animal of 156 traced that was untraceable.

- How is coordination being currently achieved within the unit?

The USDA ADT Coordinator works closely with the TDA State Veterinarian and ADT Coordinator. The TDA field staff coordinates the Animal Traceability Program through the Livestock Markets and accredited Veterinarians.

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- How is coordination being currently achieved state-wide?

The livestock market veterinarian and market personnel apply official 840 RFID tags or metal NUES tags, and USDA approved back tags, to all back to farm cattle over 18 months of age, and all dairy females, bulls and steers. The livestock market electronically enters the 840 identification or USDA approved NUES tag number, linked to the corresponding back tag, into the Tennessee animal health website. TDA can access the data for traceability efforts for cattle diseases, food safety, or homeland security issues. The computer database is a website program so identification data

can be input directly into the database from livestock markets and other livestock handling locations where animal identification is done.

- How does the present unit coordinate activities with other existing agencies/units?

The Tennessee Department of Agriculture (TDA) provides incentives and field support for the livestock markets to facilitate the program. The livestock market Veterinarian and market personnel apply official USDA official tags and approved back tags to all back to the farm cattle over 18 months of age and all dairy replacement females, bulls and steers. Market cattle going directly to slaughter continue to have only USDA approved back tags applied. The livestock market submits electronically the official tag numbers linked to the corresponding back tag to the TDA Anim-All website for storage in their database. TDA can access the data for traceability efforts if needed for cattle diseases, food safety or homeland security purposes.

- What standards for traceability are currently being used? Are they appropriate?

The Tennessee Program seeks to continue objective assessment of animal disease traceability by using the recommended Preliminary Traceability Performance Measures as listed below.

1. The State or Tribe that received a reference animal determines the State or Tribe in which the animal was officially identified and notifies that State or Tribe of the reference animal's official identification number.
2. The State or Tribe where a reference animal was officially identified confirms that it has documentation that the official identification number was issued within its jurisdiction and that it has contact information for the person who received that identification number.
3. The State or Tribe that received a reference animal determines the State or Tribe from which the animal was moved interstate into its jurisdiction and notifies that State or Tribe of the reference animal's official identification number.
4. The State or Tribe that receives notification that a reference animal moved interstate from its jurisdiction determines the address or location from which the reference animal was shipped.

- What is the state of technology infrastructure?

The installation of the web-based data system in 2010 lets identification data to be entered directly into the TDA database from participating livestock markets. This direct entry of identification data allows for

efficient documentation of animal identification for conducting an animal disease inquiry or for documentation of disease free status. In 2014 the TDA IT department is developing a new option for the recording of cattle traceability information for the Tennessee Market Cattle Identification Program. This option will let the livestock markets and veterinarians e-mail an excel spreadsheet of the tag information to the TDA office and have the information automatically uploaded into the TDA data system.

- Are requests for information available 24/7, or only available M-F, 40 hours per week, if authorized personnel are present?

The information is available Monday through Friday 40 hours per week during business hours 8:00 AM until 4:30 PM, but being a web-site database makes the information accessible 24/7 in an emergency situation.

The TDA provides incentives and field support for livestock markets to facilitate the program. Since 2005-2006, the TDA has received major legislative appropriations to support the animal industries of the State with a particular focus on the animal identification program. Approximately 42 million dollars has been appropriated to provide co-funding for a variety of initiatives with all funding contingent upon premises identification being a requirement for program enrollment. The allocation of State money designated for agriculture includes projects that would facilitate producers, livestock markets, and other livestock assembly sites to procure premises identification by linking state co-payments for purchases of animal handling facilities equipment, herd bulls, herd evaluations, plus incentives for markets and veterinarians to purchase scanners, software and computers related to the collection of animal identification data. Plans are to continue to require premises registration as a key element of the current program.

Federal funding plays an integral part of the plan since ten field personnel are estimated to be involved in over 450 events yearly to maintain and advance animal tracing capability of the Tennessee Animal Disease Traceability Program.

2.3 Strengths and Weaknesses

- The web-site database is the strength of the state system; it lets identification data to be entered directly into the TDA database from participating livestock markets and accredited livestock veterinarians. This direct entry of identification data makes for efficient documentation of animal identification for conducting an animal disease inquiry or for documentation of disease free status.

  Another strength of the program is the state and federal field personnel that visit the markets regularly on sale days to address

issues regarding the new animal traceability rule. These regular visits are for the purpose of inspection and monitoring activities, including verification that all eligible cattle are identified and that required record keeping and transmission of ID data is being carried out in accordance with instructions. Field personnel, consisting of animal health technicians and staff veterinarians, maintain close liaison with the livestock markets and market veterinarians on all matters pertaining to the federal traceability rules and the market cattle identification program.

- What are the weaknesses in terms of "lack of" technology, human resources, personnel capabilities, etc.?

    The State of Tennessee currently has a sound traceability program. Twenty-seven (27) of the largest licensed livestock markets in the State are currently participate in the voluntary MCIP. This leaves thirteen markets that have chosen not to participate.

    The department is working on ways to increase the use of electronic CVIs by accredited veterinarians. Our goal with the Tennessee cattle identification program is to have 95% of the accredited livestock veterinarians participate in the program and to promote the use of electronic CVIs in the next 3 years.

    The capture of traceability data from cooperative disease programs was implemented in December of 2010. Every identification from Tuberculosis, Brucellosis, and Pseudorabies virus testing and Brucellosis vaccinations was being entered into Core One. Since September 2011, only a portion of the individual ID has been captured due to the lack of a data entry clerk at USDA or TDA. TDA recently hired a full time data entry person to transfer all identification from the cooperative disease programs into Core One.

2.4   Opportunities and Threats

- The Tennessee web-based data program is stored on the state computer system and is backed up daily. The web based program traces back all market cattle to the livestock market. This traceability system still relies on the market keeping good records of all business transactions of the seller and buyer. Also several of the smaller livestock markets do not participate in the voluntary program so TDA can only trace cattle from these markets with USDA approved backtags and market records.
- TDA expanded the animal identification program for accredited livestock veterinarians in Tennessee in July of 2011. This program has the veterinarians enter official animal identification plus premise identification of the farm of origin.
- Identifying the half million feeder cattle with official RFID or metal tags that leave the state.

11

2.5   Inventory of existing infrastructure and suitability assessment

At the present, participation of livestock markets in the market cattle identification program is voluntary. State and federal personnel visit markets regularly on sale days for the purpose of addressing issues about the new traceability rule, inspection and monitoring activities, including verification that all eligible cattle are identified and that required record keeping and transmission of data is being done in timely fashion and in accordance with instructions. Field personnel maintain liaison with livestock markets and market veterinarians on matters pertaining to the new traceability rule and the market cattle traceability program. The field staff works closely with the State ADT Coordinator and the USDA ADT Coordinator.

The central repository for the data for the Market Cattle Identification Program is the web-based data system that allows identification data to be entered directly into the TDA database from participating livestock markets and accredited livestock veterinarians. On a weekly basis, Premise identification information is downloaded into the system from the State Premise Registration System. In the TDA data base the Premise Identification information is linked to the official identification of the animal. This direct entry of identification data facilitates efficient documentation of animal identification for conducting an animal disease inquiry or for documentation of disease free status.

In addition to the field staff, a staff veterinarian, supervisor and two clerical data personnel work with the Tennessee animal identification web-based system in Nashville. Another clerical data person provides data entry of identification data originating from Interstate Certificates of Veterinary Inspection. The web-base animal identification computer program is overseen by the Tennessee Department of the Agriculture IT staff.

Animal Traceability Computer Storage information

Storage (method): The data is stored using a SQL server.

Storage (size): The SQL server storage for this application area is a table consisting of 91217 rows, by 21 columns; which is consuming approximately 25560Kb (~25Mb) of storage space.

Security/location: The SQL server is housed at OIR's secure server facility outside of Nashville TN. Direct (SQL) access to the data is limited to a few select workstations, on the state's private LAN.

User access to data is accomplished by Web browser applications employing an internal menu system of login for data access for authentication and authorization.

Speed: This varies depending on network load and is generally bound by current network traffic. Speed is generally "good". The route data takes

is approximately: user request through web browser client (e.g. Internet Explorer) to the web server, which makes the data request. The data is then returned as part of the web page back to the requesting user.

III.   VISION AND MISSION CONTEXT FOR ADVANCING TRACEABILITY

3.1   Vision Statement

 The Tennessee Department of Agriculture works to ensure a healthy, growing animal industry. TDA partners with private veterinarians and livestock industries to provide programs aimed at preventing, controlling and eradicating certain infectious or communicable diseases of livestock.

The Tennessee Animal Disease Traceability Program strives to have an effective disease surveillance program by continuing to improve every aspect of animal identification. The overall objective of this program in advancing animal disease traceability is to have searchable epidemiological information prior to responding to any disease inquiry or response need, and by so doing support an effective animal disease surveillance plan that documents disease free status. This same data is essential for supporting interstate animal activity and for planning continuity of operations.

3.2   Mission Statement

The Tennessee Department of Agriculture partners with state and federal officials, private veterinarians and livestock industries to provide programs aimed at preventing, controlling and eradicating certain infectious or communicable diseases of livestock and other domestic animals. Activities include administering eradication programs for brucellosis, tuberculosis, Scrapie and Pseudorabies, along with the control program for equine infectious anemia. TDA also enforces the laws and rules regulating interstate and intrastate movement of animals.

The Tennessee Animal Disease Traceability Program assists in the overall objective of having a system to support an effective disease surveillance program. The intent is to continue improving efficacy in every aspect of animal identification. The overall objective of advancing animal disease traceability in Tennessee is to have searchable epidemiological information prior to responding to any disease inquiry or response need. This data is essential for supporting interstate animal activity, an effective animal disease surveillance plan and for planning continuity of operations.

IV.   TRACEABILITY REQUIREMENTS

4.1   Strategic goal(s)

There are 40 livestock markets with 27 markets participating in the volunteer market cattle identification program. In 2010 the program was expanded to include the capture of identification data from health certificates and from

program test and vaccination records. This expansion moves the program toward the goal of identifying all eligible cattle in marketing channels, including slaughter cattle which are presently identified at markets with official USDA approved back tags. The results of this work will advance animal disease traceability, not only in Tennessee, but also through the interface with other jurisdictions throughout the country. In so doing, it will provide an ongoing system for continual monitoring of the livestock population for disease or other situations that might be injurious to animal and human health.

4.2   Programmatic goals (objectives)

The overall objective of the Tennessee animal disease traceability program is to have searchable epidemiological information prior to responding to any disease inquiry or response need. This Animal Identification program supports an effective animal disease surveillance plan that documents disease free status which is essential for supporting interstate animal activity and for planning continuity of operations.

1. **Objective 1:**   Maintain Current Animal Disease Traceability Infrastructure within Tennessee.

The actual animal identification of cattle is performed by livestock market personnel and the market veterinarians. Twenty-seven licensed livestock markets in the State currently participate in the voluntary traceability program. The TDA has received major legislative appropriations to support the animal industries of the State with a particular focus on the animal identification program. For the past eight years these appropriations provide co-funding for a variety of initiatives with all funding contingent upon premises identification being a requirement for program enrollment. Plans are to continue to require premises registration as a key element of the current program. These allocated funds are paid directly the participating livestock producers, livestock markets and veterinarians.

The TDA provides field support for livestock markets to facilitate the program. The livestock market veterinarian and market personnel apply official 840 RFID tags or official NUES metal tags, and USDA approved back-tags, to all back to farm cattle over 18 months of age, and all replacement dairy females. New this fiscal year (2013-2014) was the payments to livestock markets and accredited veterinarians for identifying all dairy males (bulls and steers) from Tennessee farms that have no official identification. Livestock markets in Tennessee utilize the USDA approved backtag as their market sale tag, thus tying animal identification directly to the market records of the seller. The livestock market electronically transmits the 840 RFID identification or official NUES tag number, linked to the corresponding back-tag, to the TDA animal health

data system via the Anim-All traceability website. Since 2010 identification data, via the state website, is entered directly into the database from livestock markets and other livestock handling locations where animal identification is done.

In a separate component of the traceability program, accredited livestock veterinarians have been encouraged to participate in the Animal Identification Program. Participating veterinarians are utilizing official ID ear tags like the 840 RFID tags, to identify cattle for their clients. The accredited veterinarian receives an incentive for promoting and performing animal identification in his/her practice area. This program requires that participating herds have a premises identification number. Identification data is entered directly into the Tennessee animal health database from the veterinarian's office via the Anim-All website. Also this fiscal year a system has been implemented to assist livestock producers to officially identify cattle on their premises. Tennessee producers are now able to obtain official NUES tags and taggers through the TDA Animal Health office. This program promotes the identification of cattle with official NUES tags and requires a premises identification number for the livestock producers.

2. **Objective 2:** Conduct outreach activities to producers, accredited veterinarians, livestock markets, harvest facilities and other industry shareholders.

In addition to the weekly visits to sales at livestock markets, field staff participates in various opportunities for program outreach on the new traceability rule in their contacts with food animal veterinary practitioners, feed stores, livestock associations, etc. Outreach activities consist of personal contact, verbal communications, and distributing printed educational materials. At the statewide and regional levels, staff personal conducts outreach activities through participation in statewide and regional industry and veterinary organizations. Additionally, direct personal contacts will be made with the owners/operators of the 13 non-participating livestock markets to try and recruit them into the MCIP.

It is estimated that the seven (7) animal health technicians and three (3) field staff veterinarians will participate in a total of 120 outreach events with a total of approximately 170 plus hours during each year of the three year plan.

3. **Objective 3:** Maintain and advance the animal disease tracing capability of the Tennessee Animal Disease Traceability Program by increasing the amount of traceability data collected by APHIS/VS State-federal cooperative program activity, interstate health certificates of inspection, and the Accredited Veterinary Cattle Identification Program.

Our goal is to increase the amount of traceability data collected by APHIS/VS State-federal cooperative program activity; the current administrative personnel will continue data capture efforts and the monitoring of interstate veterinary certificates of inspection.

To accomplish this objective, a full-time staff veterinarian/ ADT coordinator will provide oversight of the traceability program. TDA's administrative personnel will continue to collect data from hand-written CVI's and monitor eCVIs in the TDA's database GlobalVetLink system and USDA, VSPS.

The goal of the Tennessee Animal Traceability Program is to identify cattle through an electronic data base (the Anim-All cattle traceability website and the TDA's eCVI data base). The department's goal is to be able to identify electronically approximately 5,000 head of cattle monthly.

It is estimated that the 10 field personnel will be involved in 450 events with a total of over 200 hours yearly in activities associated with this objective.

4. **Objective 4**:   Establish objective assessment of animal disease traceability by providing baseline measures and projected advancements during the period of the roadmap using the four standard measures listed below in 4.3.

4.3   Animal disease traceability performance measures

The Tennessee animal disease traceability system primarily deals with cattle permanently identified in market channels. Tennessee has a significant poultry industry and a small swine industry. Swine and poultry lack individual animal identification as a rule, and are usually marketed in lots and traced by lot identification to the farms of origin or places of commingling. Purebred swine are individually identified and may be traced similarly to cattle. However, commercial swine are generally traced by lots and sale records to their place of origin.

The Tennessee Program seeks to establish objective assessment of animal disease traceability by using the recommended four standard measures:

1. The State or Tribe that received a reference animal determines the State or Tribe in which the animal was officially identified and notifies that State or Tribe of the reference animal's official identification number.

A. Time to report to the State/Tribe from which an animal was moved interstate

Initial: 95% within 2 business days.
Goal: 95% within 2 business days.

B. Tennessee will notify states by telephone, e-mail, and/or fax of reference animal(s) and provide where the animal(s) were officially identified and the animal's identification number.

2. The State or Tribe where a reference animal was officially identified confirms that it has documentation that the official identification number was issued within its jurisdiction and that it has contact information for the person who received that identification number.

A. Time for the State/Tribe of first officially tagging/identifying an animal in question that has moved interstate to provide a record of the official tag distribution

Initial: 80% within 4 business days.
Goal: 95% within 2 business days.

B. Tennessee will utilize the state animal database, AIMS, and electronic CVI's database to confirm the official identification of reference animal(s) within our jurisdiction and confirm who received the official ID number.

3. The State or Tribe that received a reference animal determines the State or Tribe from which the animal was moved interstate into its jurisdiction and notifies that State or Tribe of the reference animal's official identification number.

A. Time to report to the State/Tribe of official identification of an animal in question that has moved interstate

Initial: 90% within 7 business days.
Goal: 95% within 2 business days.

B. Tennessee will notify states via telephone, e-mail, and/or fax when it is determined the state from which an animal(s) was shipped into Tennessee and notify that office of the reference animal's official identification.

4. The State or Tribe that receives notification that a reference animal moved interstate from its jurisdiction determines the address or location from which the reference animal was shipped.

A. Time for the State/Tribe from which an animal in question has moved interstate to provide the location and contact information from which the animal has moved interstate.

Initial: 80% within 5 business days.
Goal: 95% within 2 business days.

B. Tennessee will notify receiving states of official identification via telephone, e-mail, and/or fax when address or location of reference animal(s) that was shipped interstate is determined.

Following are specific measures used to measure animal disease traceability in Tennessee cattle.

a) Time to Trace Reference Animals to Their Herds of Origin, Previous Location of Commingling, or Birth Location.

b) The Tracing of Exposed and High Risk Cattle to Their Locations, Including Tracing Animals Forward and Back from the Index Herd: It is difficult to affix a time parameter to this objective because of the wide variety of epidemiologic circumstances in this situation such as, there being a large number of animals involved and the scattering effect of cattle in market channels. The policy however, is to treat each case with urgency, and with all available personnel resources.

c) Eligible Cattle in Livestock Markets: Currently it is estimated that approximately 80% of eligible cattle are being identified in Tennessee livestock markets electronically because participation in the program is voluntary and only 27 of 40 markets in the state are participating. Further, it is estimated that gaining participation in the program by the 13 non-participating markets would increase the number of cattle identified electronically by approximately 20%. Gaining this participation has been targeted as high priority.

4.4 Data requirements

Tennessee Cattle Traceability Program

The TDA provides incentives and field support for livestock markets to facilitate the program. The livestock market veterinarian and market personnel apply official 840 RFID tags or official NUES tags, and USDA approved back tags to all back to farm cattle over 18 months of age, and all dairy females, bulls and steers. Market cattle going direct to slaughter have only USDA approved back tags applied. Livestock markets in Tennessee utilize the back tag as their market sale tag, thus tying animal identification directly to the market records of the seller. The livestock market electronically transmits the official USDA identification, linked to the corresponding back tag, to the Tennessee animal health data center. Identification data is entered directly into the database from livestock markets, accredited livestock veterinarians and other livestock handling locations where animal identification is done. It is expected that accredited veterinarians will continue to apply official identification while performing regulatory animal disease work. Most livestock markets have been applying the RFID tags because of the incentive paid to the market, but it is expected that less than 40% of the participating markets will use the official metal tags as official ID as long as the Market Identification Program continues. Official NUES Metal tags will continue to be distributed through the USDA ADT Coordinator and the office of the State Veterinarian.

Beginning July 1, 2011, licensed accredited veterinarians that do food animal practice began to participate in the animal identification program on a voluntary

basis. Participating veterinarians utilize permanent type NUES tags or 840 RFID tags, to identify cattle for their clients. The accredited veterinarian will receive an incentive for promoting and performing animal identification in his/her practice area. Participating cattlemen will be required to have a premises ID, along with a physical farm address, in order to participate in the program. Identification data will be entered by the veterinarian's office directly into the Tennessee Animal Health data base via the All-Animal website.

The Tennessee animal disease traceability information is compatible and interoperable with other States/Tribes/Territories, and USDA, for sharing animal disease traceability data. The individual identification used is official and originates from legitimate cattle premises or licensed livestock markets, with both having premises identification as the location identifier. The individual identification devices are unique ear-tags, either 15-digit 840 RFID ear tags or the USDA 9-digit metal ("brite") tags. Validation of data is verified with quarterly field trace-back exercises using actual identification data from program records. The availability of traceability information to other jurisdictions is usually during normal business hours. However, it can be up to, and including, 24/7 if the level of emergency warrants such coverage. All methods of transmission (e.g. electronic, telephone, fax, and mail) are generally available and would be used appropriately, with response times being variable and dependent on the complexity of the trace-back.

The Tennessee Department of Agriculture (TDA) pays an incentive to licensed livestock markets and accredited veterinary practitioners for applying the official ID and entering the identification data directly into the State animal disease database via website. The livestock markets and accredited veterinarians have the option to purchase the 840 RFID tags from private vendors. The records of tag distribution are entered and maintained in a Tennessee state animal disease database and the animal identification management system (AIMS) plus a local spreadsheet document.

4.5 Information technology plan

The central repository for the data for the Market Cattle Identification Program is the web-based data system that allows identification data to be entered directly into the TDA database. The state browser is backed up daily. On a weekly basis, Premise identification information is downloaded into the system from the State Premise Registration System. In the TDA data base the Premise Identification information is linked to the official identification of the animal. This direct entry of identification data facilitates efficient documentation of animal identification for conducting an animal disease inquiry or for documentation of disease free status.

4.6 Resource requirements
- Is specific expertise needed that is not currently available?
  Present need is more data entry personnel to keep up with animal traceability from certificates of veterinary inspection, disease program and vaccination records.
- Is a continuity of operation plan (COOP) in place and how frequently is it tested? The Tennessee Department does have a continuity of operation plan (COOP) in place and is tested every 12-24 months.
- Are automated data capture resources needed? Yes

4.7 Organizational needs

4.7.1 Executive support
- The State Veterinarian is very involved in the Animal Identification Program. The State Veterinarian meets weekly with the Assistant Commissioner of TDA Consumer and Industry Services to obtain feedback on the implementation of programs including Animal Traceability and other matter dealing with the department.
- Since state funds are used in the support of animal traceability the Tennessee Department of Agriculture is subject to state audits.

4.7.2 Coordination and oversight procedures
- The animal disease traceability advisory committee is made up of the following groups: Tennessee Department of Agriculture, Farm Service Agency, Tennessee Agriculture Extension Service, Tennessee Farm Bureau, Tennessee Farmer's Cooperative, University of Tennessee College of Veterinary Medicine faculty, private veterinarians and the Tennessee Livestock Network. Representatives of these groups meet in a face to face meeting on a yearly basis.

  The staff veterinarian who serves as the state ADT Coordinator also serves as the state coordinator of the county Disaster Animal Response Teams. Along with his other emergency management duties with Animal Health, he is the TDA Emergency Support Coordinator to the Tennessee Emergency Management Agency and regularly participates in TEMA exercises.

  The State Veterinarian in consultation with the Assistant State Veterinarian and the ADT Coordinator arbitrates any disputes.

4.7.3 Policy
- The Tennessee Department of Agriculture's Animal Health division supports an effective animal disease surveillance plan in all departmental programs. The overall objective of the Tennessee animal disease traceability program is to have searchable epidemiological information prior to responding to any disease inquiry or response need. This is essential for supporting interstate animal activity.

4.7.4 Staffing
- The state animal health technicians and staff veterinarians are responsible for maintaining direct contact with livestock markets, accredited veterinarians, feed stores, livestock associations, etc. in their specific sections of the state. These personnel participate in state wide and regional industry and veterinary organizations. The State administrative veterinary staff consists of two data clerk entry personnel, one supervisor overseen by the State ADT Coordinator and the Assistant State Veterinarian. Animal Traceability Program is a vital individually coordinated unit of the Tennessee Department of Agriculture Animal Health.

4.7.5 Budget requirements

Since 2005-2006, the TDA has received legislative appropriations to support the animal industries of the State with a particular focus on the animal identification program. Approximately 42 million dollars has been appropriated during the past nine (9) years to provide co-funding for a variety of initiatives with all funding contingent upon premises identification being a requirement for program enrollment. The allocation of State money designated for agriculture includes projects that would facilitate producers, livestock markets, and other livestock assembly sites to procure premises identification by linking state co-payments for purchases of animal handling facilities equipment, herd bulls, herd evaluations, plus incentives for markets and veterinarians to purchase scanners, software and computers related to the collection of animal identification data. Plans are to continue to require premises registration as a key element of the current program. The Tennessee Animal Identification program has been allocated $375,000.00 for the Market Cattle Identification Program for this fiscal year. To

continue the Animal Traceability program the next three years TDA will have to maintain this
amount to fund the Animal Identification Program

Projected costs for FY2014	TOTAL BUDGET	PROPOSED VETERINARY SERVICES PORTION
PERSONNEL	$616,770.00	$78,942.00
FRINGE BENEFITS	$212,540.00	$27,630.00
TRAVEL	$2,268.00	$2,268.00
EQUIPMENT		
SUPPLIES - FIELD	$18,500.00	$18,500.00
SUPPLIES - LAB		
CONTRACTURAL		
OTHER	$2,220.00	$2,220.00
TOTAL DIRECT CHARGES	$852,298.00	$129,560.00
INDIRECT CHARGES (14.63%)	$124,688.00	$14,407.00
TOTAL	$976,986.00	$143,967.00

Projected costs for FY2015	TOTAL BUDGET	PROPOSED VETERINARY SERVICES PORTION
PERSONNEL	$647,600.00	$82,900.00
FRINGE BENEFITS	$223,200.00	$29,000.00
TRAVEL	$2300.00	$2300.00
EQUIPMENT		
SUPPLIES - FIELD		
SUPPLIES - LAB		
CONTRACTURAL		
OTHER	$2200.00	$2,200.00
TOTAL DIRECT CHARGES	$875,300.00	$116,400.00

INDIRECT CHARGES (14.63%)	$128,060.00	$17,030.00
TOTAL	$1,003,360.00	$133,430.00

Projected costs for FY2016	TOTAL BUDGET	PROPOSED VETERINARY SERVICES PORTION
PERSONNEL	$680,000.00	$87,000.00
FRINGE BENEFITS	$234,400.00	$30,450.00
TRAVEL	$2400.00	$2400.00
EQUIPMENT		
SUPPLIES - FIELD		
SUPPLIES - LAB		
CONTRACTURAL		
OTHER	$2300.00	$2300.00
TOTAL DIRECT CHARGES	$919,100.00	$122,150.00
INDIRECT CHARGES (14.63%)	$134,470.00	$17,870.00
TOTAL	$1,053,570.00	$140,020.00

4.7.6.1 Outreach activities

One of the main objectives of the Tennessee Animal Traceability Program is to conduct outreach activities to producers, accredited veterinarians, livestock markets, harvest facilities and other industry shareholders.

In addition to the weekly visits to sales at livestock markets, field staff participates in various opportunities for program outreach in their contacts with food animal veterinary practitioners, feed stores, livestock and poultry associations, etc. Outreach activities consist of personal contact, verbal communications, and distributing printed educational materials. At the statewide and regional levels, staff personal conducts outreach activities through participation in statewide and regional industry and veterinary organizations. Additionally, during the year direct personal contacts are made with the owners/operators of the 13 non-participating livestock markets to try and recruit them into the traceability program.

4.7.6.1. Accredited veterinarians

In addition to the outreach mentioned above, accredited livestock veterinarians have been asked to participate in the Animal Identification Program on a voluntary basis. Participating veterinarians are being encouraged to utilize permanent type ear-tags like the 840 RFID tags, to identify cattle for their clients. The accredited veterinarian receives an incentive for promoting and performing animal identification in his/her practice area. Participating cattlemen are required to have a premises ID, along with a physical farm address, in order to participate in the program. Identification data is entered directly into the Tennessee animal health database from the veterinarian's office via website.

The Electronic Certificate of Veterinary Inspection Program was added to electronic database created by TDA Information Systems division in 2011. The eCVI database allows the accredited veterinarian to enter a CVI directly in the database and the information is immediately available to TDA. This is a significant cost saving measure for the future in that the printing of health certificates will be significantly decreased once more practitioners are on-line. There is no cost to the accredited veterinarian for use of the eCVI system created by TDA. TDA administrative staff currently monitors all certificates through both the TDA Data System and GlobalVetLink and those that are hand-written and forwarded to the state veterinarian's office from the issuing veterinarian.

4.7.6.2. Livestock markets

The field staff makes weekly visits to sales at livestock markets; the staff participates in various opportunities for program outreach in their contacts with the livestock markets. Outreach activities consist of personal contact, verbal communications, and distributing printed educational materials. Additionally, during the year direct personal contacts are made with the owners/operators of the 13 non-participating livestock markets to try and recruit them into the MCI program.

4.7.6.3. Industry as a whole

The field staff participates in various opportunities for program outreach to industry in general; their contacts include food animal veterinary practitioners, feed stores, livestock and poultry associations, etc. Outreach activities consist of personal contact, verbal communications, and distributing printed educational materials.

The allocation of State money designated for agriculture includes projects that facilitate producers, livestock markets, and other livestock assembly sites to procure premises identification by linking state co-payments for purchases of animal handling facilities equipment, herd bulls, herd evaluations, plus incentives for markets and veterinarians to purchase scanners, software and computers related to the collection of animal identification data. Plans are to continue to require premises registration as a key element of the current program.

The animal disease traceability advisory committee is made up of the following groups: Tennessee Department of Agriculture, Farm Service Agency, Tennessee Agriculture Extension Service, Tennessee Farm Bureau, Tennessee Farmer's Cooperative, private veterinarians, University of Tennessee College of Veterinary of Medicine faculty and the Tennessee Livestock Network. Representatives of these groups meet in a face to face meeting on a yearly basis. This committee is informed of any plans to advance animal traceability that will impact the animal industry.

4.8. Monitoring and reporting interstate movement activity

- How will the number of animals and the number of shipments be monitored that move interstate?

- Presently the Tennessee Department of Agriculture monitors cattle exported to other states by Electronic Certificates of Veterinary Inspections (eCVIs) which are stored in the state browser; hand-written CVIs for cattle are entered into the state browser by staff personnel. A monthly report of exported cattle is generated for the Tennessee ADT Coordinator. Staff personnel maintain a spreadsheet of the number of imports and exports of cattle, bison, equine, goats, sheep, swine, alpacas, lamas and exotic animals. The data is taken from electronic and hand-written CVIs, Global Vet Link, and USDA VSPS. A yearly report is sent to USDA NASS. The numbers of USDA official metal tags are recorded in the quarterly cooperative appendix B-10 by the Tennessee state ADT coordinator. Since the FY 2012 cooperative agreement the number of CVIs created within by species and the numbers of CVIs received by species have been recorded in the cooperative agreement quarterly reports.

5 TRACEABILITY IMPLEMENTATION

5.1 Ranking of priorities for advancement

A. Market Cattle Identification Program- focus on the point of commerce and high risk cattle classes (over 18 months and dairy females, bulls and steers) at livestock markets. Promoting RFID and web based data entry by the livestock markets.
B. Veterinary Cattle Identification program- focus on the point of commerce and high risk cattle classes (over 18 months and dairy females, bulls and steers) at clients' farms. Promoting RFID, web based interface self entry.
C. Increase the use of Electronic Certificates of Veterinary Inspection
D. Increase the animal identification of interstate movement of beef and dairy Feeder cattle

Continued funding at the same or increased levels is needed to continue to improve the present Animal Traceability initiative in the state of Tennessee. The various components are somewhat dependent on the amount of success the Market Cattle Identification Program incurs. TDA will continue this program as long as state funds are available, federal funds are used primarily for salaries and benefits to partially fund work in all aspects of animal traceability.

5.2 Implementation of objectives

A. 2014-2016 Market Cattle Identification Program- focus on the point of commerce and high risk cattle classes at livestock markets. Increase our outreach to the livestock markets that are not participating in the voluntary Cattle Identification Program. Increase market cattle traceability to 95% by the end of the 3 year period.
B. 2014 Veterinary Cattle Identification program- focus on high risk cattle classes. Promoting RFID, web based interface self entry. Increase number of veterinarians using ECVI and participating in the cattle identification program by personal visits from the TDA field staff. Increase the amount of electronic data (ICVI and animal identification).
C. 2016 Increase the tracing of interstate movement of beef and dairy feeder cattle.